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## 2013 FORD F-150 Super Crew OEM Service and Repair Workshop Manual

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**Keyless Entry Rear Antenna (vehicles with tailgate step with light bar)**

Positive Lead	Measurement / Action	Negative Lead
C4817-1		Ground
C4817-2		Ground

**PATS (passive anti-theft system) Rear Antenna (Super Crew and SuperCab)**

Positive Lead	Measurement / Action	Negative Lead
C348-1		Ground
C348-2		Ground

**PATS (passive anti-theft system) Left Front Door External Antenna (gasoline/hybrid vehicles)**

Positive Lead	Measurement / Action	Negative Lead
C543-2		Ground
C543-3		Ground

**PATS (passive anti-theft system) Right Front Door External Antenna (gasoline/hybrid vehicles)**

Positive Lead	Measurement / Action	Negative Lead
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## A10 CHECK THE SUSPECT ANTENNA CIRCUITS FOR A SHORT TO GROUND

- Measure:

### **PATS (passive anti-theft system) Center Antenna**

Positive Lead	Measurement / Action	Negative Lead
C325-1	$\Omega$	Ground
C325-2	$\Omega$	Ground

### **Keyless Entry Rear Antenna (vehicles without tailgate step with light bar)**

Positive Lead	Measurement / Action	Negative Lead
C4321-1	$\Omega$	Ground
C4321-2	$\Omega$	Ground

### **Keyless Entry Rear Antenna (vehicles with tailgate step with light bar)**

Positive Lead	Measurement / Action	Negative Lead
C4817-1	$\Omega$	Ground
C4817-2	$\Omega$	Ground

### **PATS (passive anti-theft system) Rear Antenna (Super Crew and SuperCab)**

C1797-1	$\Omega$	Ground
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**Right Front Approach Detection Antenna (electric vehicles)**

Positive Lead	Measurement / Action	Negative Lead
C1796-2	$\Omega$	Ground
C1796-1	$\Omega$	Ground

**Are the resistances greater than 10,000 ohms?**

<b>Yes</b>	GO to <a href="#">A11</a>
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<b>No</b>	REPAIR the circuit in question.
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**A11 CHECK THE SUSPECT ANTENNA CIRCUITS FOR AN OPEN**

- Measure:  
**PATS (passive anti-theft system) Center Antenna**

Positive Lead	Measurement / Action	Negative Lead
C325-1	$\Omega$	C2280B-40
C325-2	$\Omega$	C2280B-27

**Keyless Entry Rear Antenna (vehicles without tailgate step with light bar)**

C543-3	$\Omega$	C2280D-28
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**PATS (passive anti-theft system) Right Front Door External Antenna (gasoline/hybrid vehicles)**

Positive Lead	Measurement / Action	Negative Lead
C634-2	$\Omega$	C2280D-12
C634-3	$\Omega$	C2280D-29

**Left Front Approach Detection Antenna (electric vehicles)**

Positive Lead	Measurement / Action	Negative Lead
C1797-2	$\Omega$	C2280D-28
C1797-1	$\Omega$	C2280D-13

**Right Front Approach Detection Antenna (electric vehicles)**

Positive Lead	Measurement / Action	Negative Lead
C1797-2	$\Omega$	C2280D-29
C1797-1	$\Omega$	C2280D-12

**Are the resistances less than 3 ohms?**

FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new BCM (body control module) .

REFER to: [Body Control Module \(BCM\)](#)

(419-10 Multifunction Electronic Modules, Removal and Installation).

**No**

The system is operating correctly at this time. The concern may have been caused by module connections. Address the root cause of any connector or pin issues.

## PINPOINT TEST B : UNABLE TO TURN THE IGNITION ON

### Normal Operation and Fault Conditions

REFER to: [Passive Anti-Theft System \(PATS\) - System Operation and Component Description](#)(419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start, Description and Operation).

### Possible Sources

- Battery voltage concern
- PCM (powertrain control module) concern
- SOBDMC (secondary on-board diagnostic control module C) (if equipped) concern
- PATS (passive anti-theft system) concern
- ABS (anti-lock brake system) module concern

## B1 CHECK VEHICLE BATTERY

- Perform the Battery Condition Test.

REFER to: [Battery](#)(414-01 Battery, Mounting and Cables, Diagnosis and Testing).

### Is the battery OK?

**Yes**

GO to [B2](#)

**No**

CORRECT the battery condition and VERIFY correct charging operation.

REFER to: [Battery](#)

(414-01 Battery, Mounting and Cables, Diagnosis and Testing).

## B2 CHECK FOR THE NO KEY DETECTED MESSAGE

## PINPOINT TEST C : DTC (DIAGNOSTIC TROUBLE CODE) B10D7:05

### Normal Operation and Fault Conditions

REFER to: [Passive Anti-Theft System \(PATS\) - System Operation and Component Description](#)(419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start, Description and Operation).

### DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
BCM (body control module) B10D7:05	PATS Key: System Programming Failures	Sets when a failure occurs during the key programming procedure.

### Possible Sources

- Keys not programmed
- Passive key

### C1 CHECK BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the BCM (body control module) self-test.

### Are there any other Diagnostic Trouble Codes (DTCs) Present ?

<b>Yes</b>	DIAGNOSE all other Diagnostic Trouble codes (DTCs) first. Refer to DTC (diagnostic trouble code) Chart in this section.
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<b>No</b>	GO to <a href="#">C2</a>
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### C2 PROGRAM SUSPECT PASSIVE KEY

- Program the suspect passive key again.  
REFER to: [Anti-Theft Key Programming - Scan Tool](#)(419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start, General Procedures).

### Is the passive key programmed successfully?

Immobilizer (CEI) as part of the PMI (programmable module installation) following on-screen instructions.

## PINPOINT TEST E : DTC (DIAGNOSTIC TROUBLE CODE) B10D8:00

### Normal Operation and Fault Conditions

REFER to: [Passive Anti-Theft System \(PATS\) - System Operation and Component Description](#)(419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start, Description and Operation).

### DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
BCM (body control module) B10D8:00	PATS Key Less Than Minimum Programmed: No Sub Type Information	Sets when the when less than two keys are programmed.

### Possible Sources

- Minimum 2 keys not programmed

## E1 CHECK BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the BCM (body control module) self-test.

### Are there any other Diagnostic Trouble Codes (DTCs) Present?

<b>Yes</b>	DIAGNOSE all other Diagnostic Trouble codes (DTCs) first. Refer to DTC (diagnostic trouble code) Chart in this section.
<b>No</b>	PROGRAM the second PATS (passive anti-theft system) key. REFER to: <a href="#">Anti-Theft Key Programming - Scan Tool</a> (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start, General Procedures).

## PINPOINT TEST F : DTC (DIAGNOSTIC TROUBLE CODE) B10DA:51

### Normal Operation and Fault Conditions



DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P161A:00	Incorrect Response from Immobilizer Control Module: No Sub Type Information	Sets when the BCM (body control module) ID received by the PCM (powertrain control module) does not match the ID stored in the PCM (powertrain control module) memory.
SOBDMC (secondary on-board diagnostic control module C) P161A:00	Incorrect Response from Immobilizer Control Module: No Sub Type Information	Sets when the BCM (body control module) ID received by the SOBDMC (secondary on-board diagnostic control module C) (if equipped) does not match the ID stored in the SOBDMC (secondary on-board diagnostic control module C) (if equipped) memory.
PCM (powertrain control module) P161B:00	Incorrect Response from Secondary Immobilizer Module: No Sub Type Information	Sets when the ABS (anti-lock brake system) ID received by the PCM (powertrain control module) does not match the ID stored in the PCM (powertrain control module) memory.

#### Possible Sources

- The BCM (body control module) ID received by the PCM (powertrain control module) and the SOBDMC (secondary on-board diagnostic control module C) (if equipped) does not match the ID stored in PCM (powertrain control module) and SOBDMC (secondary on-board diagnostic control module C) (if equipped) memory.
- The ABS (anti-lock brake system) ID received by the PCM (powertrain control module) does not match the ID stored in PCM (powertrain control module) memory.

#### **G1 CHECK PCM (POWERTRAIN CONTROL MODULE) AND SOBDMC (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE C) (IF EQUIPPED) DIAGNOSTIC TROUBLE CODES (DTCS)**

- Using a diagnostic scan tool, carry out the PCM (powertrain control module) and SOBDMC (secondary on-board diagnostic control module C) self-test.

#### **Are there any other Diagnostic Trouble Codes (DTCs) Present?**

<b>Yes</b>	DIAGNOSE all other Diagnostic Trouble codes (DTCs) first. Refer to DTC (diagnostic trouble code) Chart in this section.
<b>No</b>	CARRY OUT the module initialization REFER to: <a href="#">Anti-Theft Key Programming - Scan Tool</a>



## Anti-Theft Key Programming - Scan Tool

<b>419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start</b>	<b>2022 F-150</b>
<b>General Procedures</b>	<b>Procedure revision date: 02/7/2022</b>

### Anti-Theft Key Programming - Scan Tool

#### Programming

##### NOTE

A passive key with a depleted battery(ies) only starts the vehicle when in the backup starting location. The RKE (remote keyless entry) functionality remains inoperative until the key battery(ies) is replaced.

##### NOTE

The diagnostic scan tool **must** have an active Internet connection. A hardwired connection is strongly recommended.

##### NOTE

When programming keys, the RKE (remote keyless entry) transmitter and the PATS (passive anti-theft system) portion of the key are programmed at the same time.

##### NOTE

Common anti-theft security access choices are: